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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,740	12/31/2001	Young-Hwa Kim	H49.12-0002	4461

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EXAMINER

PIERCE, JEREMY R

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/036,740

Applicant(s)

KIM ET AL.

Examiner

Jeremy R. Pierce

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10, 15 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 9 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Applicant's amendment filed on February 10, 2005 has been entered. Claims 1-3, 15, and 18 have been amended. Claim 16 has been cancelled. Claims 1-10, 15, and 17-20 are currently pending. Applicant's amendment is sufficient to overcome the 35 USC 112 rejections set forth in sections 4 and 6 of the last Office Action regarding claim 1 because the phrase "permeating" has been replaced by the phrase "penetrating." Applicant's amendment and arguments are also sufficient to overcome the 35 USC 103 rejections set forth in sections 8 and 12 of the last Office Action involving Nakanishi et al. (U.S. Patent No. 5,853,854) in view of Fukuoka (U.S. Patent No. 3,952,358) because Fukuoka teaches the woven fabric is useful in an upper vamp section of a shoe whereas Nakanishi is directed to the bottom layer of a shoe. The 35 USC 103 rejections made with regard to Fortier et al. (U.S. Patent No. 4,810,559) is also withdrawn solely for the reason that Fortier et al. do not teach the plates to be polygonal. However, new grounds of rejection are presented using the Fortier et al. reference.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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3. Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitations of claims 18 and 19 are considered new matter because neither the drawings nor the specification support the limitation of a lesser extent or a greater extent of height of the guard plates penetrating the top surface of the fabric substrate. There is no disclosure as to the requisite degree of penetration.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 10, 15, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortier et al. (U.S. Patent No. 4,810,559) in view of Prevorsek et al. (U.S. Patent No. 5,187,023).

Fortier et al. disclose a protective web comprising a piece of fabric with a plurality of small platelets spaced on the fabric (column 1, lines 31-40). The platelets may be glued onto the fabric (column 1, line 44). The first material comprising the platelets would be the glue, and the second material would be the platelets themselves. Fortier

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et al. fail to teach that the glue would form the shape of a polygonal guard plates.

However, Figure 3A shows the plates glued onto the fabric. The glue appears to be only present where the plates are present. Therefore, the glue would have the same area as the plates, and thus, also have the same shape of the plates. In gluing the plates onto the fabric, a person of skill in the art could either 1) apply the glue on the plates, and then stick the plates on the fabric, or 2) apply the glue onto the fabric and place the plates onto the glue. It would have been obvious to a person having ordinary skill in the art at the time of the invention to apply the glue to the plates, thus giving the glue layer the shape of a polygonal plate in order to avoid making the fabric sticky and to save on the amount of glue used. The plates would maintain a selected gap size, so long as the fabric were not manipulated. Glue would hold the plates in place at a fixed distance from one another. Fortier et al. do not teach the plates to be polygonal.

Prevorsek et al. teach body armor comprising polygonal plates (Figures 11 and 12).

Prevorsek et al. show that using polygonal plates allows for increase protection because the amount of gap space is limited. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use polygonal plates in Fortier et al. in order to increase the penetration resistance of the fabric, as shown in Prevorsek et al. With regard to claim 10, the platelets would inherently be more wear resistant than the glue because the platelets are placed on the fabric to supply wear resistance (Abstract).

The platelets would not be needed in the invention of Fortier et al. if the glue were capable of providing wear resistance. With regard to claim 15, glue is a printable material.

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6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fortier et al. in view of Prevorsek et al., and further in view of Neal et al. (U.S. Patent No. 6,035,438).

Fortier et al. do not disclose using a third material. Neal et al. disclose using epoxy resin and glass or aramid fibers onto ballistic resistant plates in order to increase its ability to absorb impact (column 4, lines 52-55). It would have been obvious to one having ordinary skill in the art to add epoxy resin and glass or aramid fibers onto the surface of the disks in Fortier et al. in order to increase the ability to absorb impact, as taught by Neal et al.

7. Claims 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fortier et al. in view of Prevorsek et al. and Neal et al., and further in view of Moureaux et al. (U.S. Patent No. 5,943,694).

The combination of Fortier et al. and Neal et al. do not teach the additional material, epoxy resin and glass or aramid fibers, to not completely cover the plate. The combination also does not teach that not all plates need to be covered with the additional material. Moureaux et al. teach that when a ballistic resistant material is reinforced with another material, that the reinforcement need only be present in the areas where it is most needed (column 7, line 64 –column 8, line 3). It would have been obvious to one having ordinary skill in the art to cover some but not all of the plates of Fortier et al. and to partially cover other plates of Fortier et al. where protection is needed most with the epoxy resin and glass or aramid fibers in order to better protect vital areas and keep the garment lightweight by avoiding unnecessary coating.

***Allowable Subject Matter***

8. Claims 4, 5, 9, and 17 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments filed February 10, 2005 have been fully considered but they are not persuasive.

10. Applicant argues that the terms "lesser extent" and "greater extent" of height are well understood in the art and implied in the written description and drawings. The Examiner agrees that the terms are definite, and has withdrawn the 112, 2<sup>nd</sup> paragraph indefiniteness rejections. However, the specification does not provide a teaching of the degree of penetration of resin material into the fabric, so the limitations constitute new matter.

11. Applicant argues that Fortier does not teach the feature of the guard plates being affixed to the substrate in a fixed relationship to each other to maintain a selected gap size. However, a yieldable fabric would meet the claim limitation as long as force wasn't applied to the fabric. During the interview on February 1, 2005, the Examiner and Applicant discussed that the gaps of the present invention always stay the same. However, the present claims do not recite that a uniform gap width is always maintained under all conditions. The glue material of Fortier would keep the plates in a fixed

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relation to one another on the fabric. In order to alter the relationship of the plates in Fortier, manipulation of the fabric would be required. However, the claims are not directed to the fabric being manipulated. Also, upon further consideration, a web that "yields" would not necessarily alter the relationship of the plates to one another.

Nothing in Fortier requires that the distance between the plates increase just because the web can accommodate the shape of the body part on which the fabric worn. Fortier does not require the material to be elastic, so it does not appear that the relationship between the plates must be altered upon fabric use. The "yielding" of the Fortier material is due to the position of the plates and not the fabric itself being elastic or yielding per se.

12. Applicant argues that Fortier provides little or no description of how its platelets would be affixed with glue. However, the Examiner set forth possible methods for adhering the platelets to the fabric in the rejection. The position of the Examiner is that it would be obvious for a person of ordinary skill in the art to arrive at the claimed structure, not that the structure is anticipated by Fortier.

13. Applicant argues that Fortier teach pouring the paste through orifices, which produce platelets having rounded edges. However, an orifice does not have to be round. An orifice can be comprised of a polygonal shape.

14. Applicant argues that Fortier does not teach a second plurality of plates registered relative to a first plurality of plates. However, if glue is used to hold the plate to the fabric, then the materials are registered relative to one another because they are adjacent to one another.



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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy R. Pierce whose telephone number is (571) 272-1479. The examiner can normally be reached on Monday-Friday between 9am and 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*JRP*

Jeremy R. Pierce  
March 16, 2005

*Elizabeth M. De*